

Abstract

A molecular memory media having a media surface and a platform with read/write heads. The platform and media are moved to allow one of addition, removal, and repositioning of atoms, electrons, and charges on a surface of the media. The media is a material capable of storing data written to it, and detectable using a vibrating tip sensor that resonates at a free space value which is phase shifted when charges or anomalies on a surface of the media are present. Other methods of reading and writing to the media are presented. The media may be enhanced by augmenting grain boundaries of the media vis deposition and removal of PMMA materials. Servo trenches and sync bits identify positions of the read/write heads and maintain alignment during memory operations.